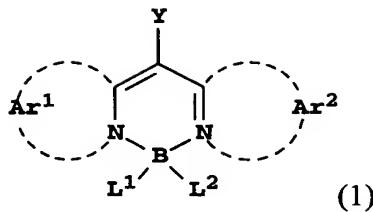


**CLAIMS:**

1. An electroluminescent device comprising a light emitting layer comprising a boron complex wherein the boron is bonded to a nitrogen atom of a 6-membered heteroaromatic ring group and to a nitrogen atom of a 5-membered heteroaromatic ring group, provided that the 5- and 6-membered heteroaromatic ring groups are further connected by a methene bridge to form a 6-membered ring, and provided further that the 5-membered heteroaromatic ring contains at least one additional heteroatom that is divalent or trivalent.  
5
2. The device of Claim 1, wherein the additional heteroatom is a N, O, S, Se, or Te atom.  
10
3. The device of Claim 1, wherein the additional heteroatom is a N, O or S atom.
4. The device of Claim 1, wherein the five-membered ring is fused to an additional aromatic ring group.  
15
5. The device of Claim 1, wherein the five-membered ring is fused to an additional aromatic ring group and the six-membered ring is fused to an additional aromatic ring group.  
20
6. The device of Claim 1, wherein the methene bridge is substituted with cyano substituent, an aryl group, a heteroaryl group, or an alkyl group.  
25
7. The device of Claim 1, wherein the boron complex is represented by Formula (1),  
30



wherein:

5             $Ar^1$  represents the atoms necessary to form a six-membered

heteroaromatic ring;

10             $Ar^2$  represents the atoms necessary to form a five-membered

heteroaromatic ring that contains at least one additional heteroatom that is divalent or trivalent;

15             $L^1$  and  $L^2$  represent independently selected substituents;

$Y$  represents hydrogen or a substituent.

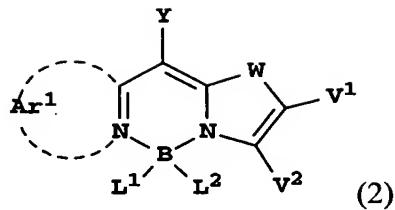
8.            The device of Claim 7, wherein,  $Ar^1$  represents the atoms necessary to form pyridine ring group.

9.            The device of Claim 7, wherein,  $Ar^2$  represents the atoms necessary to form an imidazole ring group, an oxazole ring group, a thiazole ring group, or a selenazole ring group.

10.           The device of Claim 7, wherein  $Y$  represents a cyano substituent, a trifluoromethyl substituent, an aryl group, a heteroaryl group, or an alkyl group.

11.           The device of Claim 7, wherein  $L^1$  and  $L^2$  represent fluoro substituents.

12.           The device of Claim 1, wherein the boron complex is represented by Formula (2),



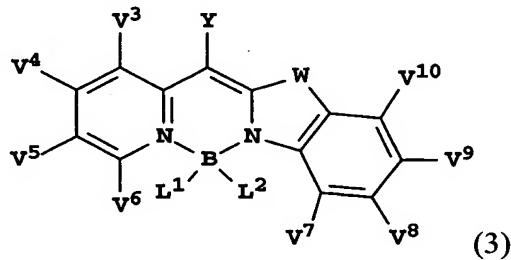
wherein:

W represents O, S, Se, or N-R<sup>a</sup>, wherein R<sup>a</sup> is a substituent;  
 V<sup>1</sup> and V<sup>2</sup> independently represent hydrogen or an  
 5 independently selected substituent, provided that V<sup>1</sup> and V<sup>2</sup>  
 may join together to form a ring group;  
 Ar<sup>1</sup> represents the atoms necessary to form a six-membered  
 heteroaromatic ring group;  
 L<sup>1</sup> and L<sup>2</sup> represent independently selected substituents;  
 10 Y represents hydrogen or a substituent.

13. The device of Claim 12, wherein V<sup>1</sup> and V<sup>2</sup> independently represent an aryl group or an alkyl group.

14. The device of Claim 12, wherein V<sup>1</sup> and V<sup>2</sup> join together to form an aromatic ring group.

15. The device of Claim 1, wherein the boron complex is represented by Formula (3),



wherein:

W represents O, S, Se, or N-R<sup>a</sup>, wherein R<sup>a</sup> is a substituent;

5

$V^3-V^{10}$  independently represent hydrogen or an independently selected substituent, provided that adjacent substituents may join together to form a ring group;  
 $L^1$  and  $L^2$  represent independently selected substituents;  
Y represents hydrogen or a substituent.

10

16. The device of Claim 15, wherein W represents S.

17. The device of Claim 15, wherein  $L^1$  and  $L^2$  represent fluoro substituents.

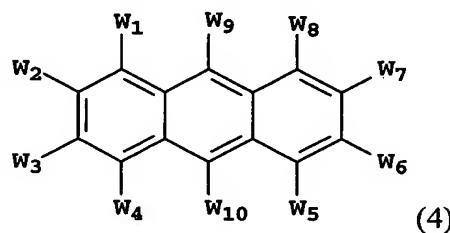
18.

The device of Claim 15, wherein, independently, at least two of  $V^3-V^6$  and at least two of  $V^7-V^{10}$  combine to form independently selected ring groups.

19. The device of claim 1 wherein the layer comprises a host and dopant where the dopant is present in an amount of up to 10 wt % of the host.

15

20. The device of claim 1 wherein the host material is represented by Formula (4),



20

wherein:  
 $W_1-W_{10}$  independently represent hydrogen or an independently selected substituent, provided that two adjacent substituents can combine to form rings.

21. The device of claim 20 wherein W<sup>9</sup> and W<sup>10</sup> independently represent naphthyl groups.

22. The device of claim 20 wherein W<sup>9</sup> and W<sup>10</sup> represent a naphthyl group and a biphenyl group.

5 23. The device of claim 20 wherein W<sup>9</sup> represents a biphenyl group.

24 The device of claim 1 wherein the boron complex is between 0.5 and 8% by volume of the light-emitting layer.

10 25. A display comprising the electroluminescent device of claim 1.

26. The device of claim 1 wherein white light is produced either directly or by using filters.

27. An area lighting device comprising the electroluminescent device of claim 1.

15 28. A process for emitting light comprising applying a potential across the device of claim 1.